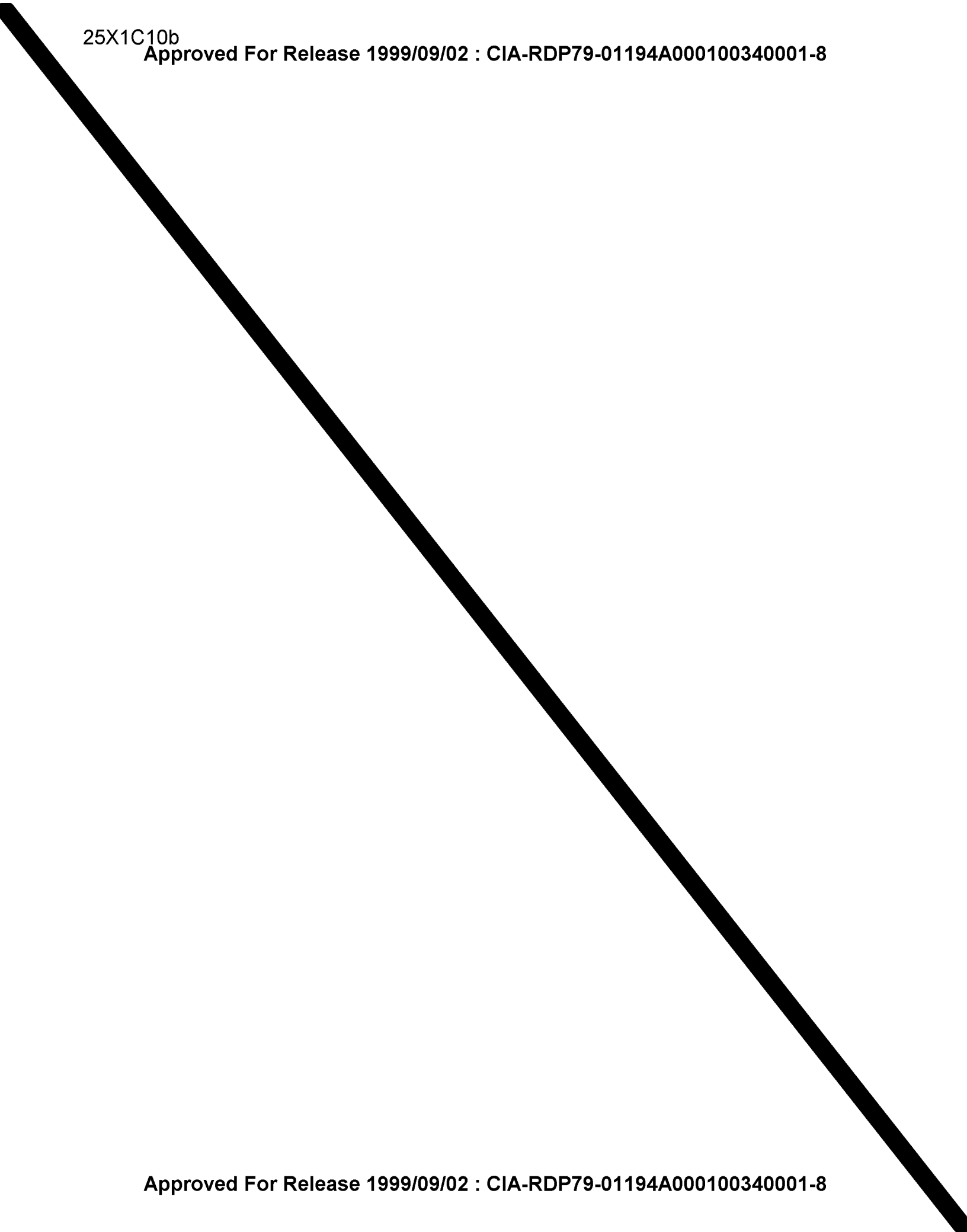

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OPEC AND THE INDUSTRIAL COUNTRIES: THE NEXT TEN YEARS

By Thomas O. Enders

FROM 1947 to 1973 the shift of power is exponential. In 1947 the United States ceased to be a net exporter of oil; the basing point for oil prices moved from the Gulf of Mexico to the Persian Gulf, and with it the underlying leverage. Although the Organization of Petroleum Exporting Countries (OPEC) was formed in 1960, its membership was so disparate that at first it did little to exploit the shift. With prices low, U.S. dependence on imported energy grew to 14 percent of energy consumption in 1972. Europe's dependence on energy imports grew from 33 percent in 1960 to 65 percent in 1972; Japan's from 43 to 90 percent in the same period. By the late 1960s OPEC members were acting more masterfully to turn the increased dependence to advantage; prices began to move up. The 1973 October War revealed OPEC's full power.

It is important to be precise about the implications of this shift for the industrial countries. First, the cartel action continues to pose a short-term problem of economic management. The sharp jump in oil prices accounted for about a quarter of the average 14 percent inflation experienced in 1974 among the member-countries in the Organization for Economic Cooperation and Development (OECD). Industrial dislocation and unemployment caused by the 1973–74 embargo, and conservative demand-management policies in Europe and Japan designed to overcome oil-caused balance-of-payments deficits helped trigger the present recession. No doubt the effects of the continued high price of oil on internal demand will make it more difficult to design policies to return the industrial economies to a high rate of growth. All of these difficulties are important and costly, but they are —or can be made—transitional.[1]

Second, there is a medium-term problem of financial management. Most recent studies suggest that the accumulation of financial assets by OPEC will peak in the late 1970s or early 1980s at levels perhaps in the range of $200 to $250 billion in 1974 dollars. This is an enormous total by present comparison—official holdings of financial assets by *all* the OECD countries totaled $118 billion at the end of 1974—but it is less than was estimated a year ago. Although the political and financial implications of the expected accumulations cannot yet fully

[1] See Hollis B. Chenery, "Restructuring the World Economy," *Foreign Affairs*, January 1975.

be judged, recycling of oil dollars has proceeded more smoothly than feared, and this problem appears manageable.[2]

Third, however, there is a major long-term transfer of real income, which has only begun. The exact time-path of the transfer is difficult to determine, since it depends in part on how rapidly the financial assets OPEC is accumulating are converted into imports of goods and services and how long the high price is sustained. In 1974 OPEC increased its imports of goods and services from OECD countries by about $8 billion in real terms (equivalent to somewhat more than 0.2 percent of OECD's 1974 gross national product). Into the future, OPEC imports from OECD countries, financed by its accumulated financial assets, will continue to grow for some time after its export revenues peak. It is possible that they will reach $110 billion by 1980 (in 1974 dollars), as opposed to about $30 billion in 1973 (in 1974 dollars). The $80 billion gain, equivalent to more than 1.7 percent of the expected GNP of the OECD group in 1980, can be taken as an estimate of the peak value of the real annual cost of the cartel action to the industrial world.

These costs, imposed at a time when most of the industrial countries are having increasing difficulty in meeting the social, economic and security requirements of their people, are of major significance. It is important to realize that these are not one-time costs; they accrue each year.

Fourth, and perhaps most important of all, there are the political and strategic implications of vulnerability to a new interruption in supply. Existence of the cartel, and the high price for oil that it has imposed, are coordinate with that vulnerability; one presupposes the other. As long as the cartel is effective, the central element of energy in the industrial economies will be subject to manipulation, both as to prices and availability, by supplying countries which do not have, and may well not develop, an inherent interest in their prosperity. We must be ready for the exercise of this power in a new Middle East conflict; whether and how it would be used in other circumstances we do not know. But clearly the threat to the maintenance of stable economic conditions is significant.

As long as the cartel is effective, it will also impose a permanent tension among the consuming countries because of the wide disparity in their dependence on imported oil. Canada, the United States, and soon Britain have options that Japan, Spain, and Italy do not have. Competitive offers of special economic and political terms to secure

[2] Compare Khodadad Farmanfarmaian *et al.*, "How Can the World Afford OPEC Oil?" *Foreign Affairs*, January 1975.

petroleum supplies are widely recognized as likely to degrade the bargaining position of the consumers as a group. Such protective mechanisms as oil-sharing in an emergency and financial solidarity can provide a counterweight, and these have now been effectively agreed upon, largely through the International Energy Agency (IEA), formed a year ago.[3] But over the long term the impulse will be strong to substitute producer/consumer lines of force for those now existing among the industrial countries of Europe, America and Japan. If that occurs, the internal contradictions between the security and the economic interests of the industrial countries will grow and their political coherence will dissipate.

So far, the short-term problems of economic and financial management have received the greatest public attention in the industrial countries. Exaggerated fear of their difficulty has given way to relief that they are not intractable. But the real costs of the cartel—the longer-term transfer annually of goods and services, and the potential deterioration of the security and political position of the industrial countries—have yet to be fully faced.

The real-income losses of the consumers are the gains of the producers, but in other respects the effects of the cartel action are not reciprocal. Producers share with consumers an interest in effective management of the short-term economic and financial problems. Return of the industrial economy to a high rate of growth strengthens demand for oil and thereby strengthens the cartel, and the protection of financial assets now is essential to future real transfers and growth. It is only by de facto integration into the industrial economy, through massive increases in trade, industrial investment and technological transfer, that the producers can realize their real-wealth gains. Four-fifths of OPEC's imports now come from the OECD group; as they rise, the interpenetration of consumer and producer economies will become a central datum of the international structure.

In politics, the lines of potential development lead in different directions. When the October War revealed its power, OPEC was the loosest of coalitions, harboring at least four contenders for leadership (Iran, Saudi Arabia, Algeria, and Venezuela) and a spectrum of traditional state rivalries. But to consolidate its gains and survive this year's slump in oil demand, OPEC has had to develop more coherence. Saudi Arabia, which some believed a year ago might play the maverick and use its vast producing capacity to bid the oil price down, has swung into a supportive role. The Saudis engineered the most recent overall price increase at Abu Dhabi in November, then created

[3] See Henri Simonet, "Energy and the Future of Europe," *Foreign Affairs*, April 1975.

conditions for, or acquiesced in, production cuts deep enough to balance OPEC supply with demand. (Saudi production in April was less than 6 million barrels a day [MMBD], down from 9 MMBD at the peak last summer; meanwhile Saudi capacity has reached more than 11 MMBD.) Leadership competition among the major states was muted. An informal system emerged in which states wishing to increase exports could do so by shaving quality differentials and lengthening credit terms, while the basic government take of $10.12 per barrel remained intact.

This growing cohesiveness of OPEC has given it an opportunity to bid for the leadership of the whole developing world. The raw materials doctrine developed by Algeria—that the market power of consumers has long kept down raw material prices and thus the economic development of producers, and that cartel action is needed to "revalorize" earnings, along with "indexation" to protect the new wealth by increasing oil prices in proportion to increases in the prices of OPEC imports—served first as a defense against the resentment of other less-developed countries whose growth prospects have been damaged or halted by high oil prices. Increasingly, the doctrine is becoming a means by which the oil producers cement their own unity and that of the LDC bloc as a whole.

At the same moment that their economic integration into the industrial world is accelerating, OPEC members are asserting their political identity with a coalition of developing states intent upon challenging the industrial world. In doing so OPEC is making negotiation of stable new institutional ties with the industrial countries far more difficult, as the failure of the producer/consumer preparatory meeting this April showed. In time, the oil producers will expose themselves to escalating demands from the LDCs. And the tension between OPEC's economic and political interests will eventually increase.

II

It is in the interest of the industrial countries—indeed, of all consuming countries—that conditions be created in which OPEC loses and cannot subsequently regain the power to set oil prices at artificially high levels. What are these conditions? Essentially, that the market for OPEC oil be compressed to, and held at, a volume at which the mechanism for allocating production cuts within OPEC can no longer function.

It is possible to imagine a number of scenarios in which individual producers break ranks and slash prices. But none of these has much plausibility in view of the great economic and political interest all

OPEC members have in high prices, and because of the political pressure from their colleagues to which many are vulnerable. In order to predict with some confidence that several major members will cut prices in attempting to increase their market share, the following conditions must be present:

—Such a group of countries must have significant unused capacity, and practical possibilities for shifting production cuts onto the "low absorbers" such as Saudi Arabia must have been exhausted;
—They must be unwilling to accept a stretch-out of their development and military spending programs;
—They must be in payments deficit on current account;
—They must have reached the limits of drawing down accumulated financial reserves and of borrowing within or outside OPEC;
—Relief through increases in the real price of OPEC oil must have been exhausted.

We know that there is little chance that these conditions will occur or can be created between now and the end of 1977. As a result of the second mild winter in a row, the recession, drawing down of inventories, and price resistance, the OPEC export market will be down to an average of 27 MMBD this year from 30 MMBD in 1973. With the end of the recession, the steady decline of oil and gas production in the United States, and a return to normal winters—all of which seem overwhelmingly likely—oil export demand will return to or exceed pre-embargo levels by 1977. If real prices are maintained, OPEC exports might reach the $125 billion range (in 1974 dollars) in 1977, reflecting an export demand that might by then have risen to 31 MMBD.

As to the amount of the real income transfer, OPEC import expenditures have risen faster than expected: 27 percent by volume in 1974. They may do so again in 1975, although limitations on port facilities and resultant demurrage and delay in the Persian Gulf are already significant and growing. Thereafter constraints on internal transport and distribution are likely to take over. The current account surpluses of OPEC as a whole are likely to remain large—on average about $50 billion a year (in 1974 dollars) in the period 1975–77—but some individual producing countries will probably go into deficit: Algeria and Indonesia this year, Ecuador in 1976, Venezuela in 1977. These countries now have some excess capacity, but the volume is small enough (perhaps 0.5 MMBD that they would like to use) so that others in OPEC could accommodate it by reducing their production. Intra-OPEC loans (a possibility Algeria has already broached) would be another means of adjustment. Some slowdown in Algerian and Ven-

ezuelan development spending is also likely.

In the period 1978–1980 a major change is likely to occur in the OPEC export market as North Sea, Alaskan, Mexican and Chinese oil come on in quantities. As a rough guess, net OPEC exports might then fall to 25 MMBD or even less. With a constant real price of oil and continued import increases, Iran and most OPEC members other than Saudi Arabia and Kuwait would move into balance-of-payments deficit on current account. Drawdown of accumulated assets would provide some cushion; but there would be strong contradictory pressures —on OPEC countries collectively to *raise* the real price of oil and on some individual members to improve their market share by *shaving* prices. Hence this could be a period of substantial stress on OPEC, from which it might emerge either with a higher real price and renewed discipline or in disorder and with substantially lower prices.

In the period 1981–85 the swing element, insofar as can now be estimated, will be the U.S. Outer Continental Shelf (OCS) and Naval Petroleum Reserve No. 4 (NPR-4) in Alaska. On the basis of geological surveys these regions are now roughly estimated to provide 5–7 MMBD in this time frame. If they do, the overall OPEC market may stabilize at about the 25 MMBD level, and the pressure on OPEC cohesion, already substantial, would increase. (This is similar to the forecast in the long-term energy assessment of the OECD, published this year.) If on the contrary these regions prove unproductive (so far only two dry wells have been sunk in NPR-4), or if for economic or other reasons they are not fully exploited, pressure on OPEC would ease substantially.

What are the chances of substantial deviations from these forecasts? Economic stagnation in the OECD and large-scale new finds like the Mexican fields would compress the OPEC market below these predicted levels.[4] On the other hand, boom conditions or failure to solve the rate, financing, and siting problems of nuclear-fueled electrical utilities and thus to achieve the high rates of nuclear-power growth expected (from 20 gigawatts in 1973 to 200-240 in 1985 in the United States) could lead to a significantly larger OPEC market.

There are three conclusions to draw from this analysis:

First, there is a likelihood of strong stress on the cartel toward the end of the decade.

Second, maintenance of that pressure thereafter depends critically on the exploitation of the OCS and NPR-4.

[4] Such new producers as Mexico may, of course, join OPEC, and in any event conform their price policies to those of OPEC. The point is that their need for export outlets will still affect the market available to OPEC as a whole.

Third, the potential swings become very high in the 1980s. If the cartel loses its power to set prices in the 1978 to 1980 period, and successful exploitation of the OCS and NPR-4 maintain conditions in which it cannot be reconstituted, OPEC's annual export earnings might fall from the assumed 1977 peak of $125 billion (in 1974 dollars) to half that or even less. If OPEC were able to maintain its price-setting power and thus offset the declining market by higher real prices, the income could stay at the $125 billion level, and the higher real price would have a dampening effect on economic growth in its major markets. In both cases the real transfer through actual imports would adjust with a lag. The swing between the two cases ($60 billion or more in 1974 dollars), plus the negative impact on growth, could exceed 1.5 percent of the real OECD gross national product annually. And, of course, the political leverage of OPEC hinges almost wholly on which case applies.

III

How can the consuming countries increase the possibility of an outcome in their favor? And at what cost?

First, by conservation. If President Ford's conservation proposals of January 1975 were fully adopted, and if they were matched by similar European and Japanese programs, they could be decisive. These measures were originally designed to reduce U. S. imports by 1 MMBD by the end of 1975, 2 MMBD by the end of 1977, and over 4 MMBD in 1985 (below what they would otherwise be).

Through the actions announced by the President on May 27—increased import fees and the proposed decontrol of "old" domestic oil prices—the United States can still make progress toward his goals.[5] However, what Congress will finally do, as well as the actual impact on consumption, may not be clear for some time. Meanwhile Europe and Japan have moved faster than the United States to take effective conservation measures, but the combined bulk of their savings is not yet large.

Although the controversy has not been settled, the balance of evidence is that savings of the magnitude proposed by the President will not have growth-depressing effects. In the United States the amount of energy used per dollar of GNP fell from 107,000 BTUS to 90,000

[5] With much of 1975 already gone, the White House currently estimates that the effect of the May 27 actions would be a reduction of 0.1 MMBD by the end of 1975, 0.7 MMBD by 1977, and 2.5 MMBD by 1985. The impact of the President's total legislative program, however, including measures to stimulate production as well as conservation, would be a reduction of 0.7 MMBD in 1975, 2.2 MMBD in 1977, and 7.2 MMBD in 1985. White House Fact Sheet, *The New York Times*, May 28, 1975, p. 20.

in the years 1947–1973, a period of rapidly rising income growth. High prices will accelerate the decline in this ratio.

Second, by stimulus to the development of alternative sources. Here three sorts of action are required:

1. *Relaxation or removal of existing policy constraints.* Almost every form of energy enterprise in the industrial world is encumbered: U.S. and Canadian gas and oil by price controls; nuclear power everywhere by inadequate or outmoded utility rate structures and by siting restrictions; coal by environmental limits; new hydrocarbon exploration by legal restrictions. The relaxation of these constraints is above all a domestic political question, although it can be spurred by international review and analysis.

2. *Provision of financing.* Estimates of financing required over the next decade for energy development in the industrial countries center in the trillion dollar range (in 1974 dollars), equivalent to a fifth or a fourth of expected total capital formation. The question posed is whether energy investment should receive some form of priority access to capital markets, through the use of government guarantees or government-sponsored intermediaries. For such costly developments as oil from shale, tar sands, or coal liquefaction (which may come in in the range of $15 a barrel), substantial government financing, including such devices as the sharing of initial "front-end" costs, must be employed. Such projects lend themselves to international cooperation, with possible deals combining funding with access to technology and, in an emergency, access to product. On the other hand, many governments have so far hesitated to provide assistance to conventional energy enterprises, believing it disadvantageous to substitute political priorities for economic calculation. But some support is inevitable even in this area.

3. *Protection against "downside risk" for private capital investment.* To the extent that the financing of new energy sources is provided through government channels, such capital investment need not be seriously affected by changes in the overall price of oil, or of energy in general. As suggested above, government financing is likely to be the preponderant mechanism for most of the "non-conventional" energy sources such as solar and geothermal power, oil shale, or the Canadian tar sands.

The real problem concerns the major expansion of "conventional" sources, for which private investment must be the principal mechanism, but for which the anticipated costs are significantly higher than the price level to which OPEC oil might conceivably fall over the next ten years. New North Sea oil (less the share taken directly by

governments) comes in in many cases at $5 or even $6 a barrel. Conventional nuclear facilities, coal, and the vital OCS and NPR-4 may all be in the $6 to $8 range for their energy-equivalent output. All of these investments are price sensitive both at the outset and as they go along: they may not be undertaken, or may be delayed, if there is an actual or perceived risk that international prices will fall to or below that range in the course of development.

Such downside risk is closely linked to the future viability of the cartel. If, for example, the cartel were to lose its ability to maintain a high price in the stress period of 1978–80, the development of OCS, NPR-4 and North Sea oil could all be retarded or stopped. That in turn would result in a substantially higher OPEC export market than would otherwise occur, and conditions for renewed cartel action could be created. Put the other way around, by protecting against downside risk it is possible to be fairly certain that expected major energy investments will occur, and thus increase the odds that in the early 1980s the cartel will lose its power to set the oil price and not regain it thereafter.

IV

The problem of downside risk for investment in conventional energy sources is widely recognized. But there is much controversy over its solution. Broadly speaking, two main concepts have been put forward.

The first of these may be labeled that of "deficiency payments." Under this approach, private firms engaged in the development of energy sources would receive a subsidy from their national governments if the overall oil price falls, possibly set to cover the difference between some base price and the market price.

The advantage of this approach is that any drop in price is passed on to the consumer. The major disadvantage, however, is that under this approach it would almost surely be impossible to meet national self-sufficiency targets. In the event that overall oil prices fall, consumption is bound to be restimulated, and by substantial amounts. Thus, in contrast with the forecast that demand for OPEC oil by 1980 might be in the range of 25 MMBD at present oil prices, the demand for OPEC oil can be estimated to rise to 35 MMBD if the overall oil price were to drop to, say, $4 per barrel (in 1974 dollars). Even a remotely comparable rise in consumption would leave the industrial world still highly vulnerable to embargo and would in turn lead to new cartel action, as surely as the low prices and high dependency of the 1960s and early 1970s stimulated it in the first place.

Other drawbacks of the deficiency payment approach are the high costs to the taxpayer and the uncertain credibility of a system dependent on annual subsidy appropriations for energy companies by the American Congress or by the parliaments of OECD countries.

The second approach to the problem can be described as "border protection." The object of this approach is to prevent imported oil from being sold to the consumer within the industrial economies at disruptive price levels, i.e., at levels below the amounts required to offer the prospect of a fair return to the investors in expanded energy sources. The means required to implement this approach could be varied according to the national choice of the individual consuming countries; tariffs, import quotas, or variable levies might be used separately or in combination to produce the intended result. But the price levels maintained to assure adequate domestic investment, it may be emphasized, would be fixed only in terms of price levels to the consumer. The price actually paid to the OPEC producer would continue to be determined by the international market situation—in effect, by the relative bargaining power of consumers and producers. This is *not,* in short, a system for guaranteeing the return to the OPEC countries; indeed, its basic objective is to permit market forces to operate, eventually in favor of the consuming countries.

The major advantage of this approach is that national self-sufficiency goals can be protected. Through the stimulation of the necessary investment in expanded conventional sources, this approach provides high odds that OPEC's market will in fact be compressed to a volume inconsistent with continued cartel action.

The principal disadvantage of the approach is that the citizen as consumer does not receive the full benefit of whatever price drops may result over a period of time; on the other hand, the citizen as taxpayer in the consuming countries should have a very much lower burden under most of the possible techniques for achieving the basic goal. As for the question of continuing credibility, the "border protection" approach cannot be described as 100-percent credible, since Congress or parliaments would be under substantial pressure to remove protection and to favor the consumer when and if prices fall. However, the credibility of this approach should be greater than that of the deficiency payments approach because border protection can be legislated or decreed in advance. Once in place, and once investments have been made with reference to it, the system would develop a political constituency that would tend strongly to validate it.

Any policy of downside protection, however, will be of limited help and may disadvantage the countries that adopt it if only a few do

so. Here, as in every other aspect of the energy problem, it is important to develop a new calculus of interest:

—Energy-poor countries are interested in low prices to their citizens, but also in seeing energy-rich industrial countries develop their resources. For only if they do will demand on the international market fall and oil prices come down.

—Energy-rich countries like Britain, Canada, and the United States are interested in seeing energy-poor countries like Italy and Japan adopt the same level of protection. For the main burden of investment must fall on the energy-rich, while the primary advantages of lower prices caused by the resulting compression of OPEC's market will accrue to energy-poor countries that import much of the energy they need. Without a common level of protection, this would leave the former locked into a high-cost energy economy, and at a competitive disadvantage.

—All industrial countries have an interest in putting OPEC in the position of residual supplier of oil, with a market kept small enough to prevent renewed cartel action.

Recognizing the basic common interest that underlies this calculus, the industrialized consuming countries, meeting in the International Energy Agency, have already reached a preliminary agreement in principle. On March 20 of this year, they agreed on a minimum safeguard price system, under which each country would use means of its own choosing to prevent oil from being sold in its domestic economy below an agreed common price. The system is to be elaborated by July 1, 1975.

The question that remains is, of course, the level to be adopted for the agreed common price. Here the divergent interests of the energy-rich and energy-poor members of IEA must be reconciled. Broadly speaking, a high level for the agreed common price would benefit energy enterprise and thus countries with important energy resources. A low level would favor consumers, and thus countries that must import most of their oil.

The costs and benefits of a given system and price level can be analyzed as follows. If the level of protection is set unnecessarily high, the result will be that more investment would be undertaken than turned out to be required. With an annual investment bill estimated at roughly $100 billion per year, the real cost of any excess investment would be some relatively small part of this amount.

The opposite risk is less easy to measure precisely. If the level of protection is set too low, the result would be not enough investment to

deprive OPEC of its ability to set prices. Broadly speaking, what would then be lost to the consumer countries would be the difference between the level of their real-income transfers to the producer countries at cartel-set prices and the level of the same transfers if the cartel fails; in addition, the growth-retarding effect of higher prices must be weighed. As analyzed above, it does not seem excessive to estimate this potential difference at as much as $60 billion or more a year (in 1974 dollars). More important, the cartel would retain its power to disrupt the industrial economies by embargo, and the risk that its economic power over the consumers will be transmuted into political power would grow.

In short, the level of protection chosen must be evaluated, in effect, like the premium on an insurance policy. The penalty for guessing wrong and doing too little is incommensurately heavier than the costs of doing too much.

V

An exponential increase in the power of any group of countries, occurring rapidly and initially at the expense of others, is never easy for an international system to absorb. Obviously, the nations fortunate enough to have major oil resources will be able, in any event, to maintain a greatly improved power status and to advance the lot of their people immensely in the years to come. Only the degree of change is now at issue, and with it the broader question of a lasting accommodation that will make the adjustment bearable to oil consumers—poor countries even more than rich—and that will evolve toward a world economy in which all may advance together.

Because of the interdependence of their trade and investment, the industrialized countries hold vast reciprocal power over each other's well-being. But a structure of economic, political, and security institutions governs the exercise of that power and makes its possession tolerable. No such structure exists between the oil-producing and oil-consuming states. Its creation will ultimately be in the interest of both producers and consumers: for the producers, because their dependence on the industrial economies is growing inexorably as they convert oil earnings into real imports and new industries; and for the consumers, because oil imports and oil-related financial transactions will play a major role in their economies, whether or not OPEC retains its capacity to set prices.

But for three reasons it is too early seriously to address the design of that structure.

First, we still do not know how rapidly and how forcefully the con-

sumers will act to change the underlying market balance. In 1974 the industrial countries moved fast to draw the consequences of the embargo, establish a common strategy in the International Energy Agency, and draw up domestic energy programs. But by the time their response was ready at the start of this last winter, the recession had replaced energy as the dominant economic issue. The consequence has been to delay and to dilute energy action. As the industrial economies pull out of the recession and rising demand for oil creates conditions for new oil price increases, the politics of energy within the industrial countries will again change. It will not be possible to judge the full scope of their response until next year.

Second, it is not yet clear how far the producers will press their bid for leadership of the developing world. Should this become a permanent, dominant aim of their foreign policy, chances of successful negotiation of a new economic and ultimately a political framework between producers and consumers will be low.

Third, the future internal structure of OPEC is not yet knowable, for it depends on the way in which bargaining over production cuts develops. At one extreme would be a structure in which each OPEC member insisted that cuts be proportional to base-year output or capacity. In this case, Saudi Arabia and Kuwait would accumulate much of the OPEC financial surpluses, the industrial development of other OPEC members would be slower, and the cartel would be more fragile. At the other extreme, Saudi Arabia and Kuwait might take up most of the necessary production cuts, with the result that the industrial development of the group would accelerate, while the accumulation of financial assets by all OPEC members would be less. If developments approximate the first case, the real institutional problem between consumers and producers will be the management of the huge financial assets of a small number of countries. If events fit the second case, the problem will extend to all producers and cover a far wider range of economic and industrial problems.

The inability of the preparatory meeting called by President Giscard d'Estaing in April to agree on a concept for future discussions between producers and consumers reflected these uncertainties. But bilateral contacts to organize a new meeting are already under way, and the search for that concept will go on, for there can be no equilibrium in the world economy or in world politics until a more balanced relation of power between oil producers and industrial countries is reached, defined, institutionalized.

Why Opec's rocket will lose its thrust

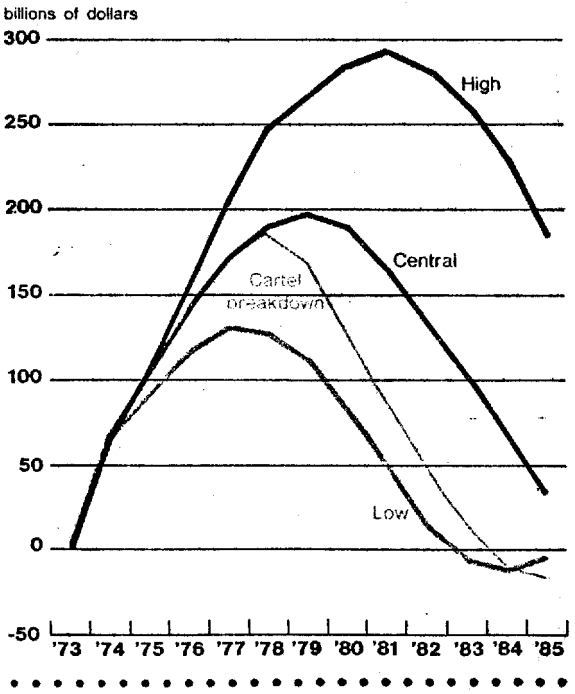
Opec's revenue surpluses — once so staggering — seem to be heading toward deficit. And how big that deficit is and how fast it happens could determine the future of the cartel.

The quadrupling of prices by the Organization of Petroleum Exporting Countries (Opec) in 1973-74 touched off a drama that has yet to end. Act I created the fear — sometimes bordering on hysteria — that the huge increase in oil revenues would be neither spent, lent nor invested in the consuming countries, and that an ever-growing surplus would disrupt financial markets, cause an international economic "collapse" or concentrate most of the world's wealth in the hands of Opec. Act II demonstrated that the problem was manageable, that the private financial markets, with some assistance from governments and the International Monetary Fund (Imf), were able to transfer or "recycle" Opec surpluses to countries saddled with large oil deficits. In Act III, now under way, the likelihood is that the once-terrifying Opec surplus will be replaced by an Opec deficit.

The reason for anticipating such a dramatic turnaround — from a presently large and growing surplus to an overall Opec deficit on current account in 1980 — is twofold. Opec's imports — purchases of all sorts of goods and services from the rest of the world — are growing much more rapidly than originally anticipated. And at the same time its oil revenues are much lower than was commonly projected because world demand for oil has been weakened, not only by the rapid price runup but by the deep recessions into which most countries have fallen. The accounting concepts on which the economic analysis is based need some clarification (see the box, page 12), but a look into the economic factors yields a persuasive argument for a turnabout.

Peering into the future of Opec surpluses means moving into a tight corner where more pertinent questions are raised than can possibly be answered with certitude. One burning question is how the future demand for Opec oil will respond to the current high price or changes in the price. The answer is that responsiveness or price elasticity over the long run hinges on a complex of factors that embraces the impact of high prices on consumption, the growth of non-Opec oil supplies, the degree to which coal is substituted for oil and the speed and efficiency with which nuclear-energy supplies can be expanded. And the more strictly political questions, such as the scope of Opec's economic development programs and the cohesiveness of the cartel,

Opec surpluses—four scenarios



are much more difficult to answer. Nonetheless, it is possible to construct a set of alternative scenarios based on what are now reasonable assumptions about factors that will determine Opec's surpluses.

Four scenarios, with corresponding patterns of accumulated Opec surpluses, are shown in the chart (page 11). Figures for the scenario deemed most plausible — the "central" scenario — are provided in the tables.

Beginning in the first table with Opec oil production, it's assumed that the cartel will hold firm through 1985 and that oil production will first be cut back in order to maintain prices in the face of recession-weakened demand, then increased somewhat as world economies recover. Meanwhile, non-Opec sources of energy will be expanding, forcing Opec to keep a firm rein on its own output to prevent a sharp decline in oil prices. Thus, Opec production in 1985 will be only a bit higher than in 1973.

Assuming a 5% average annual rate of inflation over the period, the price per barrel for Opec oil in 1985 is estimated at about $9.10. But the real price of Opec oil measured in 1975 dollars will by 1985 have skidded to about $5.60. What this means is that the value of a barrel of Opec oil in 1985 — measured by the real bundle of foreign goods and services

Opec's surpluses — the red and the black

Most estimates of Opec surpluses are confined to the oil revenues that its member governments are expected to collect, and these revenues are counted when payments are actually made, not when oil is shipped. But this approach isolates one segment of world trade — oil, and only a part of that — from other international transactions, thus making it difficult to compare Opec's balance of payments with the uniform estimates that the Imf prepares for all member countries.

Estimates of the combined current accounts of the 12 Opec members are shown in the first table (page 13). A country's current account is the sum of its exports of goods and services, including net returns on foreign investment, less its imports and gifts — "transfers" — to other countries. A plus on current account indicates that a country's net claims against the rest of the world — and hence its capital wealth abroad — have increased. Conversely, a current-account deficit means that such claims are diminished.

In 1974, the total value of Opec exports was $135 billion, of which oil accounted for $126 billion. Of that $126 billion, some $16 billion accrued to foreign-owned, private oil companies, and so that outflow or claim is included in the total of Opec's imports as an offset to equivalent exports. When imports and transfers are deducted from total exports, there is a $66 billion surplus on current account.

But because of lags, both on the receipts and payments sides of the ledger, the $66 billion figure overstates what Opec could actually lend or invest abroad in 1974. For example, some $19 billion of the $110 billion due Opec governments won't really be paid until 1975, so actual government oil revenues in 1974 came to about $91 billion. Partially offsetting that figure is the delay in paying for Opec's enormous surge of imports. Perhaps as much as $7 billion of the $35 billion of Opec imports of goods in 1974 will not be paid until sometime during this year. What all this implies is that Opec's actual "investable" surplus was $54 billion in 1974 — that is, 66−19+7=54.

Such a large discrepancy — $12 billion — between Opec's current account and investable surpluses will not recur. It happened in 1974 because of the sudden surges in both exports and imports. That's why the current account provides the most solid basis for delving into the future of Opec's surpluses.

for which it can be exchanged — will be worth a little more than half of what it was in 1975.

The estimates of Opec imports in the first table are influenced heavily by what is known about the cartel's plans to raise living standards through heavy capital investments. And it is in this respect that the position of Opec — especially that of its Middle East members — is unique. They are committing themselves to long-term capital projects — petrochemical complexes, gas-gathering systems, desalination facilities and the like — all carrying price tags that run in the billions of dollars. Work on such projects cannot be halted before completion without incurring hefty losses and undermining expectations of higher living standards.

As a result of a slower than expected growth of oil revenues and a more rapid growth of imports, the accumulated Opec surpluses, according to the central scenario, will reach a peak of about $196 billion in 1979 and then decline.

The second table shows how each of the Opec members fare as the central scenario unfolds. For a number of countries — Libya, Indonesia, Algeria, Iran and Ecuador — the current-account surplus disappears or goes into deficit by 1976. After that, it is assumed their imports will continue to rise, but at a slower rate as they run down their previous accumulation of capital. Even after all accumulated assets are used up, it is assumed they will continue to run a more moderate deficit and borrow to finance it. But there will be a limit to borrowing and eventually there will be sharp reductions in import growth.

In 1977-78, the significant current-account surpluses in Iraq, Venezuela and Abu Dhabi are also likely to disappear. After 1980, all countries, except perhaps Qatar, will be in deficit, either running down accumuated capital assets or borrowing.

Because of the uncertainty surrounding the demand for Opec oil through 1985, it is necessary to present a high-accumulation scenario. Here, the crucial assumption is that demand will remain high in 1975 and will grow faster in the following years than in the central scenario. This could reflect sluggish consumer response to high prices, a slow growth of non-Opec supplies, or both. Since the higher the

The rise and fall of Opec surpluses — the central scenario

	1973	1974	1975	1976	1977	1978	1979	1980	1985
Oil production, millions of bbl./day	31	30	26	27	28	29	30	31	32
Prices per bbl: in current dollars	$ 3.40	11.40	11.30	11.80	11.20	10.70	9.90	9.10	9.10
1975 dollars			11.30	11.20	10.20	9.20	8.10	7.10	5.60
Export of goods and services billions of dollars	45	135	121	134	137	141	142	142	183
Oil exports	38	126	107	116	114	113	108	103	107
Dividends, interest and other	7	9	14	18	23	28	34	39	76
Imports of goods and services	— 37	— 65	— 79	— 92	—105	—118	—131	—146	—216
Transfers	— 2	— 4	— 6	— 5	— 3	— 3	— 3	— 3	— 2
Current account	6	66	36	37	30	19	8	— 7	— 35
Accumulated capital holdings abroad*	†	66	102	139	169	188	196	189	30

† Less than $1 billion. All figures are rounded, so totals may not add.

* Accumulated capital holdings abroad for each yearend are obtained by adding the current-account surplus for that year to the capital holdings at the previous yearend. For example, the current-account surplus in 1976 is $37 billion. When added to the capital holdings for end-1975, which are $102 billion, the result is $139 billion in holdings for end-1976.

How the oil states will share the wealth—the central scenario

net assets abroad in billions of dollars

	1973	1974	1975	1976	1977	1978	1979	1980	1985
Saudi Arabia	5.2	24.2	38.8	54.6	69.1	81.0	88.8	90.4	15.8
Kuwait	3.5	10.9	17.4	24.7	31.7	38.0	43.3	47.1	24.8
Iran	—4.6	11.0	12.0	13.0	12.0	9.0	4.0	— 1.1	— 3.8
Iraq	1.1	5.0	7.8	10.3	11.3	11.2	9.4	6.3	— 3.2
Venezuela	0.6	8.4	14.4	19.3	23.0	24.7	24.0	20.1	— 2.5
Nigeria	—0.6	4.2	9.0	14.1	18.6	22.3	24.7	25.4	3.1
Libya	2.3	4.0	4.0	3.7	2.8	2.3	2.1	1.4	— 1.1
Indonesia	—5.1	—3.4	—3.0	—3.3	—3.6	— 4.2	— 5.1	— 5.8	— 4.3
Algeria	—2.6	—2.8	—5.9	—7.7	—9.1	—10.7	—11.1	—11.9	—13.1
Ecuador	—0.3	—0.1	0.2	0.5	0.6	0.5	0.5	0.3	— 0.9
Abu Dhabi	0.3	2.3	2.9	4.2	4.5	4.6	4.4	3.7	0.4
Qatar	0.5	2.5	4.2	6.1	8.1	9.8	11.4	12.8	14.9
Total Opec	0.5	66.5	102.3	139.5	169.0	188.5	196.2	188.7	30.3

Red indicates peak accumulation of net assets abroad.

demand, the easier it would be for Opec to maintain prices, it is assumed that prices in real terms will decline very slowly, to $9 per barrel (1975 dollars) in 1985 or $15 per barrel in 1985 dollars, again assuming 5% inflation per year. If world inflation were to return to double-digit rates, the 1985 price could be much higher, especially if Opec prefers present to future income and raises prices to a level that maximizes short-run revenues.

Since higher oil revenues would encourage higher imports, it is assumed that the accumulation of surpluses in both the central and high scenarios would be essentially the same for all but three Opec members. The exceptions are Saudi Arabia, Kuwait and Qatar where the constraint is an unwillingness to spend rather than a lack of revenues. And the result is that the total Opec surplus peaks at about $300 billion in 1981, rather than $196 billion in 1979. And with a return to rapid inflation, the high-scenario surplus could be even higher.

The third possibility is that overall demand could be lower than in the central scenario. In the low-accumulation scenario, it is assumed that the demand for Opec oil drops to 25 million barrels per day (mbd) in 1975, rises temporarily in 1976-77 as the world economy recovers, then falls to 22 mbd in 1980 as non-Opec supplies increase sharply, and only recovers to 27 mbd in 1985 after sharp cuts in Opec prices. Prices in 1985 are assumed at $4.50 per barrel in 1975 dollars and $7 per barrel in 1985 dollars.

In this environment, Opec's big spenders would have to cut imports faster than in the central scenario because the revenue constraint would come into play sooner. Opec's accumulation of assets would peak at $130 million in 1977, and the reduction in the surplus from the central scenario would be concentrated in the high-surplus countries.

Holding together

A problem common to all of these scenarios is that they assume the shares of revenue of each Opec member will not change signifi-

cantly from the present or the recent past. But most previous cartels have broken up over the issue of revenue sharing.

Suppose that some Opec members who have the ability to increase production conclude that their shares are inadequate to finance their development plans and that they seek higher shares at the expense of their fellow cartelists. That kind of scenario could run like this: An Opec country in need of more revenues would shade its price as little as possible, but enough to increase its revenues substantially. Other members see a drop in their revenues and respond by shading their prices and the first pricecutter finds its share back at its original size. But since the short-run demand for oil is relatively inelastic, total revenues would be reduced; each member of the cartel would find itself worse off than before. So if the initial pricecutter then again tries to increase his share, the other Opec members again will retaliate. And the result would be a downward spiraling of the oil price until it reached a free-market level of perhaps $5-6 per barrel in 1975 dollars.

What is the likelihood that the Opec cartel will fall apart? Thus far, only Saudi Arabia, Abu Dhabi, Libya and Algeria have been willing to accept major reductions in their revenue shares. But of those four, only Saudi Arabia is in a position where further cuts in production would not reduce its oil revenues below what it expects to spend for imports in the near-term future.

So it is the existence of countries that need not spend all of their revenues that distinguishes the Opec cartel from other cartels. As long as Saudi Arabia and a few other countries are willing to hold up the price umbrella by cutting production, there is little chance that competition for shares will cause a sharp fall in the price.

But over the longer haul, in the late 1970s and 1980s, increased non-Opec supplies of energy will diminish the demand for Opec oil, and the receipts of countries now enjoying huge surpluses may fall closer into line with their desires to spend. And if that happens, they will no longer be willing to maintain the price by accepting outsized cuts in production. And Opec would then suffer the fate of other cartels.

Two points emerge from the foregoing analysis. First, while the central scenario now appears most plausible, the alternative possibilities — especially a cartel breakdown — should not be lightly dismissed. The second point is that the accumulated Opec surpluses will shrink, irrespective of which scenario unfolds. So what began in 1973-74 as a ferocious tiger was first declawed and is now becoming a Cheshire Cat.

Perspectives on Energy

In the continuing debate over national energy policy in the midst of recession, several congressional committees have invited Brookings economists to state their views on the energy problem and to propose ways of coping with it. They agreed on some matters but differed on others. The following excerpts from their testimony necessarily reflect only a part of their views.

EDWARD R. FRIED

International Aspects of the Problem

From his statement of March 7, 1975 before the House Committee on Ways and Means

Much discussion of the energy problem since the oil embargo of October 1973 has been troubled by greatly overdrawn assessments—official and otherwise—of its international financial consequences. The more extreme of these assessments suggested that the world economy would collapse under the strain of higher oil prices, or that the international monetary system would be overwhelmed by oil money sloshing around, or that, at the least, the OPEC countries would soon acquire ownership of a major portion of the world's productive assets. These cataclysmic forecasts seemed to point to drastic policy prescriptions—the rapid achievement of energy self-sufficiency at almost any cost, and postures ranging from political accommodation to confrontation and even military action abroad. More recently a somewhat less pessimistic view has been gaining currency, but in any event this aspect of the problem deserves examination in devising U.S. energy policies.

There is no question that the quadrupling of oil prices after October 1973 was an economic event of the first magnitude—as much because of its suddenness as because of its unprecedented size. But the worst should now be behind us. So far as the international aspects of the problem are concerned, the process of adjusting to higher oil prices is well under way. Two related forces are making for adjustment: changes in the world oil market, and changes in the disposition and use of oil revenues.

A vast shakeup is taking place in the world energy picture. The traumatic impact of the embargo set importing countries on a course to achieving greater self-sufficiency in energy; the jump in oil prices reduced demand for oil, increased the attractiveness of alternative primary sources of energy (gas, coal, nuclear power), and at the same time stimulated exploration for and development of oil in importing as well as exporting countries. These factors will take time to come into full force, but their combined effect will restrict world oil exports and produce a growing gap between productive capacity in the OPEC countries and import demand. This surplus capacity is already large—perhaps 10 million barrels a day or more—mainly because of the world recession. Even with the world economy on a normal growth path, however, productive potential in the oil exporting countries at present prices could plausibly exceed demand by two-thirds in 1980 and by more than 100 percent in 1985.

In these circumstances the oil cartel will find it increasingly difficult to negotiate export restraints among its members in sufficient amount to avoid a fall in price. Its problems will be further complicated by differences among its members in marketing interests, in spending requirements for oil revenues, and in political objectives. Even allowing for existing uncertainties, oil prices in real terms should gradually decline from current levels, though remaining substantially above the soft prices of the 1960s.

Even if oil prices were to stay the same in real terms, the current account surpluses of the oil exporting countries would become much smaller. This follows from the fact that 60 percent of oil revenues go to countries with very low or moderate per capita incomes where the capacity to spend additional revenues for development, consumption, or military purposes is already large and can be quickly expanded. These countries are committing their oil money at an accelerating pace. Since it takes time for disbursements to catch up with commitments, they will temporarily accumulate large financial surpluses, to be invested chiefly in short or medium term financial instruments. By 1980, or sooner, these countries' expenditures abroad could be exceeding their revenues, with the deficits financed by the liquidation of their financial holdings.

This process of adjustment could lead to several important developments.

For one thing, the OECD countries—that is, the industrial oil importing countries—as a group could, within perhaps three to five years, reach the point where their additional exports of goods and services to the OPEC countries will come close to matching their additional payments for oil imports. The notion that oil could cause some of them to face national bankruptcy is simply unfounded. Instead, we should expect to see the balance-of-payments problem arising from higher oil prices largely give way to such problems as might arise from the actual transfer to resources.

Furthermore, OPEC financial accumulations, concentrated predominantly in the few inherently surplus countries, are likely to be much smaller than has sometimes been suggested. My calculations suggest they might amount to perhaps $150 billion in 1980 and $225 billion in 1985 (in 1974 dollars). If so, these financial holdings might be about the size of gross U.S. investments abroad today. The OPEC addition to the surplus in 1980 might amount to perhaps $15 billion, with the prospect of a further decline over the future. At that level of accumulation, it would amount to perhaps 2 to 3 percent of capital formation in the industrial countries. Even if these figures are off by a sizable fraction, the OPEC countries will not be able to buy up a substantial part of the world's productive assets.

This assessment suggests that energy will confront us with difficult but certainly manageable international financial problems. What are the policy implications?

So far as managing financial flows is concerned, it will continue to be important to have adequate intergovernmental financing facilities available to backstop or supplement the recycling capacity of the private markets. The IMF special facility, which is scheduled to borrow up to $6 billion from OPEC countries for relending to importing countries, is already in place. It may prove to be especially useful in shoring up the borrowing position of the higher income developing countries. The $25 billion safety net or solidarity fund for borrowing and lending among OECD countries is also essential and deserves strong support. The U.S. commitment to this fund would not be foreign aid, as it is sometimes erroneously described, but prudent insurance. The sooner the fund is put into place the less is the likelihood that it will have to be used.

Finally, there is the relationship between this assessment of international consequences and our own energy policy. To say that the world economy will not collapse if present oil prices, in real terms, are maintained does not mean that we can relax about energy. The events of 1973 and 1974 amply demonstrated that neither the United States nor other industrial countries should permit either their economic or their political security to be vulnerable to the actions of an oil cartel.

Prudence therefore calls for us to take steps to assure that we will be able to reduce oil imports over the medium and longer term from the levels they might otherwise reach. The United States accounts for approximately 45 percent of the energy consumption of all noncommunist countries. On a per capita basis Americans consume almost three times as much energy as Western Europeans or Japanese. The actions we take to curb the growth of energy consumption, and hence of oil consumption, will be the most important single factor determining not only our future dependence on oil imports but future trends in the world oil market as a whole.

ARTHUR M. OKUN

The Costs of Inaction

From his statement of February 5, 1975 before the Subcommittee on Multinational Corporations of the Senate Committee on Foreign Relations

The quadrupling of the world oil price that followed from the monopolization of the international petroleum market by OPEC countries had dramatic effects in worsening both our inflation and recession. According to a detailed study by my colleague George Perry, it added roughly 4 points to the inflation rate of consumer prices, equivalent to a loss of nearly $40 billion in real

disposable income. Despite the serious economic problems the United States faced before the oil price explosion, clearly the drain of energy receipts out of our consumer spending stream is the largest single cause of the present severe recession.

Assuming, however, that world oil prices have now stabilized for a time at their elevated levels, it would be fair to conclude that these short-term costs are largely behind us. The United States *can* end its recession in the present oil environment; it *can* stand the balance-of-payments costs in a regime of fluctuating exchange rates; and it *can* help keep the world financial system functioning for the foreseeable future.

In short, if the only objectives were to curb unemployment and inflation in 1975, they would not require an initiative of public policy to curb oil imports. But neither do those objectives require us to do nothing about oil imports. We can have an energy program *and* economic recovery—and I offer that as a fully considered and confident professional judgment. Honestly, this nation can deal with more than one problem at a time—unlike the small boy who was unable to walk and chew gum simultaneously. I agree fundamentally with President Ford's judgment that energy must be taken seriously in public policy in 1975. Now is the time to start moving against the unacceptable long-term consequences of a monopolized world oil market.

So long as the present structure of prices and supplies in world oil markets is maintained, we must expect to bear a large and growing toll. Let me outline the costs of the status quo.

Financial aid. Since the OPEC countries are spending on goods and services only a small portion of their extra proceeds, the industrial oil-importing nations essentially are issuing IOUs for most of the oil they buy. Generally, the consuming countries had no difficulty getting credit in the first year. But only an exceptional few could continue to borrow on this scale for very many years from normal financial sources. Most of them will need help in financing their oil bills before very long, and they will turn to friendly governments, either bilaterally or multilaterally. We will get more pleas and more pressures for aid in cash, capital goods, and food from countries whose real problem will be their inability to handle their oil bills.

Accepting large trade deficits. As a matter of arithmetic, so long as the OPEC countries have an enormous trade surplus, then all other nations of the world must have an enormous combined trade deficit. Even countries with virtually unlimited borrowing capacity will not readily incur the huge debts and debt service imposed by large trade deficits; and they will be tempted to try to pay their oil bills by cutting other imports and stimulating exports. At most, however, they would merely pass the deficits among themselves; in that process, they would reduce demands for one another's products and spread a worldwide epidemic of recession. To avoid that outcome, coordinated action must be taken to allocate the collective trade deficits. In any mutually acceptable allocation, the United States will have to agree to accept a large trade deficit—quite possibly as large as our oil import bill. It will take an extraordinary accommodation of U.S. political attitudes to accept unprecedented trade deficits without a mercantilist, protectionist backlash.

Accepting federal budget deficits. So long as $20 billion or more is drained out of the U.S. stream of purchasing power through the OPEC "oil tax," the United States will require continuing federal budgetary deficits in order to regain prosperity. Such deficits would not be inflationary: I and many other economists would urge the Congress and the President to accept them as a lesser evil than economic stagnation. However, in any realistic appraisal of the political process, the need for federal deficits to offset the oil drain dims our hopes for a return to prosperity.

Proliferating cartels. The success of the oil cartel is the envy of the world today. Other producers of raw materials and supplies would love to copy that pattern. And they will try. The great benefits of fundamentally competitive international trade could be seriously compromised. In such an environment, the United States would be sorely tempted to join the game and use its enormous latent power as the dominant exporter of wheat, feedgrains, oilseeds, and fertilizer. As an American citizen, I dread the day that we begin negotiating with Canada and Australia to form OGEC—the organization of grain exporting countries—but that development is inevitable if we are confronted by a gang of cartels controlling the supplies of the raw materials we import.

More price increases. If oil-consuming nations continue to respond passively and if private forces of supply and demand remain relatively sluggish and unresponsive, the cartel will be emboldened to raise its price again and again. Here I regard as totally unfounded a frequent criticism of President Ford's program—that by raising the price of oil to ourselves, we would provide justification for OPEC to raise its price further. OPEC isn't looking for justification; it is pursuing a joint profit-maximizing strategy. By displaying a greater elasticity of demand, we would put downward—not upward—pressure on OPEC prices. Doing nothing encourages higher oil prices.

Political leverage. So long as the OPEC nations (or any subgroup of them) can threaten to disrupt the economies of industrial countries by cutting off petroleum supplies, the resulting political leverage will continue to

compromise the self-determination and national security of the oil-consuming nations. As an economist, I put this cost last because it lies outside my bailiwick; as a citizen, I would put it at the top of the list.

These substantial costs—economic and political—make a compelling case for serious action to change the status quo. The only happy ending to the oil saga would be the restoration of a reasonable measure of competition in world petroleum markets—or, to put it another way, the end of the cartel as a potent monopoly. The challenge to U.S. policy is to promote and accelerate that happy ending at a minimum cost to ourselves and other oil consuming nations.

CHARLES L. SCHULTZE

Elements of an Energy Policy

From his statement of March 6, 1975 before the Senate Committee on the Budget

Three major objectives should be pursued in designing energy policy:

- To reduce the growth of consumption and increase domestic supplies so as to help shrink the size of the world oil market and thereby put downward pressure on prices.
- Similarly, to reduce our dependence on imports and to provide stockpiles of oil, so that even if world prices are lowered we are not vulnerable to manipulation by suppliers.
- To provide standby rationing and other emergency measures to deal with the threat of embargo during the time we will necessarily remain highly dependent on imports.

In designing policies to meet these objectives, some basic principles of action should be kept in mind.

First, there is nothing good about high energy prices in and of themselves. We do need to protect our environment. But beyond that point, we should seek the lowest energy prices consistent with maintaining independence. We may need to raise the price of some energy products above the market level in order to reach our goals. But that should be done only to the extent and for so long as absolutely necessary.

Second, however important it is to deal with the energy problem, it pales into insignificance beside the truly frightening problem of recession. We should do nothing and take no risks that threaten the prospects of economic recovery. In particular we must be sure that any energy policies that raise prices and reduce consumer purchasing power be promptly offset by *additional* tax reductions or similar devices, over and above any fiscal stimulus that is otherwise provided.

Third, energy policies should be based on long term considerations. Precisely how much imported oil we save in 1975 is far less important than the adoption of long run policies that consistently and steadily reduce imports and increase our energy independence over the decade ahead.

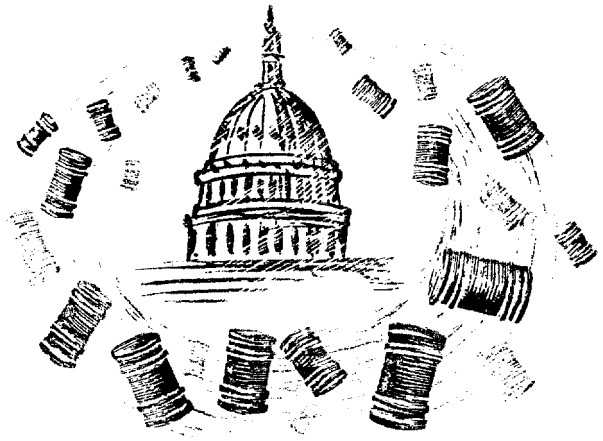
A fourth basic principle in building energy policies also stems from long run considerations. Because we need policies that can last several years, rationing is not a good device to reduce energy consumption. We do need standby rationing authority as an emergency measure in case of a sudden embargo. But as a means of gradually reducing oil consumption over the years, rationing cannot stand the test of time. Its inconveniences, inequities, and potentials for favoritism and rewards for special pleading make it unsuitable for a long term policy.

A final principle of action stems from the pervasive fact of uncertainty in the energy field. We have never experienced energy prices anywhere near the current levels. We do not know the longer run impact on demand of today's high prices. We do not have a good fix on the potentials for increasing domestic oil supply. Despite a host of estimates, we do not really know how much oil is available on the Atlantic and Pacific continental shelves. We do not know what the environmental consequences of strip-mining western coal will be. Finally, we do not know what the world price of oil is going to be one year, five years, or ten years from now. As a consequence, policies must be flexible. In particular we do not want to lock ourselves into irreversible actions—rigid floor prices on oil, large scale irrevocable leasing of outer continental shelf tracts, or once-and-for-all decisions on strip mining.

I think we should aim for a program that, even with lower $8-a-barrel oil prices, would hold imports to no more than 4 million to 6 million barrels a day (mbd) by 1985, compared with the Federal Energy Administration's unconstrained projection of 12.5 mbd at that time. If oil prices over the years fail to come down—which I doubt—the program could in the future be relaxed since the higher world oil prices would themselves reduce imports. With imports of this magnitude we could build a stockpile at reasonable costs to provide insurance against the remaining risks of vulnerability.

Conservation. I believe a gradually escalating gasoline tax should be enacted. Consumers cannot change their driving, living, and car buying habits overnight, but with a known schedule of tax increases facing them they can gradually adapt. While there is no magic in any particular set of numbers, a reasonable tax schedule might start at 7 cents a gallon and rise by 5 cents a gallon each year until by 1978 it reached 22 cents. In case imports continued to run above target levels the President should be empowered to accelerate the date of an upward adjustment by six months, and in the opposite case to postpone the effective date by a similar period.

Any such action should be subject to a "Reorganization Act" type of veto by the Congress—that is, within thirty days the Congress could by majority votes of both Houses veto his action. Each stage of the gasoline tax escalation should be accompanied by a prescheduled income tax cut designed to return to consumers every dollar taken away by the gas tax. Over the next four years



of economic recovery we do not want to be draining purchasing power from the economy.

An alternative form of gradually increasing gasoline tax has been suggested by the task forces of the House Ways and Means Committee. Under this plan each registered automobile would receive a tax-free ration of gasoline, say nine gallons a week, and a tax would then be imposed on all remaining gasoline purchases. Suggestions for such a "marginal tax" starting at 5 cents or 10 cents a gallon and eventually rising as much as 40 cents have been put forward. Something close to this could also be achieved, with less red tape and more efficiency, by levying a tax on all gasoline and then rebating to each car owner, through an additional entry on the income tax form, an amount equivalent to the gasoline tax times 468 gallons. Provisions could be made for cash rebates to those with income tax liabilities less than the tax credit.

In addition to a gasoline tax, a system of taxes and subsidies for new autos should be enacted to encourage a sharp increase in the fuel efficiency of the automobile fleet. Legislation should set, for each year between now and 1980, a target in miles per gallon for new cars, rising to say 20 mpg by 1980. A graduated subsidy or rebate should be paid on purchases of cars with greater than target fuel efficiency and a tax charged on cars with less than target efficiency. The auto industry would be put on notice, with gradually increasing targets prescheduled in legislation, and would have the opportunity to adjust both the design and the mix of cars toward greater gasoline efficiency.

On the basis of some admittedly very imperfect estimates, these measures should reduce oil consumption by perhaps 2 million barrels a day by 1980 and 2.5 million to 3 million barrels a day by 1985.

In addition the Federal Energy Administration should be empowered to require public utilities to take a number of steps to conserve oil, principally through switching from oil and gas to coal-fired plants. Those measures, together with the President's proposals for thermal efficiency standards, for a tax credit for insulating existing homes, and for an industrial energy-saving research and development program, might reduce oil consumption some 3 to 5 mbd by the early 1980s.

Supply. Some of the most important potential sources of future domestic oil supply lie on the outer continental shelf of the Atlantic and Pacific coasts. No one can know the potential oil production in those areas until exploratory drilling has been done. The President's program proposes to accelerate sharply the leasing of these offshore areas for exploration, development, and production, currently held up by court suits brought by the neighboring onshore states. If accelerated exploration and development of these areas, and of Naval Petroleum Reserve No. 4 in Alaska, proceeds at about half the pace suggested by the FEA in its accelerated production program, some 2 million barrels a day might be added to estimated domestic production.

Decontrol. There are two categories of domestic oil—old oil and new oil. The price of the former is controlled at $5.25 a barrel, while the latter is uncontrolled and sells at about $11 a barrel. The President proposes to decontrol the price of old oil. Its price would then rise to $11 and on to $13 if the President's $2 per barrel excise tax is imposed.

I do not believe old oil should be decontrolled, but I do think that the way it is now defined in the regulations should be changed. At the present time each oil property has an old oil "base"—the production from that property in the corresponding month of 1972. Only production in excess of that base is counted as new oil, to be sold at an uncontrolled price.

Oil production from a property that has been fully developed in the past tends to decline each year as the gas pressure gradually falls. In the United States the average rate of decline is about 12 percent a year. Hence in 1975 an old property will produce at about 68 percent of its 1972 base. By installing secondary recovery projects, the production from old properties can be increased. In most cases, however, secondary recovery methods will not raise 1975 production by an amount sufficient to exceed the 1972 production base. As a consequence, additional oil produced from secondary recovery projects usually will not qualify as new oil and hence will command only the $5.25 old oil price. In other words, the current artificial and clumsy definition of old oil discourages production of additional oil from secondary re-

covery projects by classifying much additional production as old oil.

One way to avoid this problem is to define old oil as 1972 production *less* 12 percent a year; in this way all oil produced on a property, in excess of the base period amount less 12 percent per year, would qualify for new oil prices. Secondary recovery projects would become attractive. Gradually the two price system would merge into a one price system as old oil became—as it naturally does anyway—a smaller and smaller fraction of total production.

Stockpiling. No one, of course, can precisely estimate the impact of the measures outlined above on demand, domestic supply, and imports of oil. Using estimates developed largely by the FEA, and shading the calculation of savings downward for conservatism's sake, a rough "guesstimate" would yield imports in 1980 of perhaps 6 million barrels a day and 5 million barrels a day in 1985. At least half the remaining imports should come from relatively secure sources not likely to use oil as a political weapon. Nevertheless, a stockpiling program must be mounted and a standby rationing and emergency conservation program enacted.

The FEA has estimated that the annual costs of building and carrying a stockpile that would provide 3 million barrels a day consumption for six months would cost about $1 billion a year, relying heavily on natural salt domes on- and offshore in the Gulf of Mexico. But stockpiling poses a dilemma. On the one hand, we want to build stocks not only to ease the problems an embargo could cause but also to decrease the likelihood that one will occur. On the other hand, adding to the demand for world oil in order to build up a stockpile runs counter to the goal of reducing the size of the world oil market as a means of putting downward pressure on prices. There is no easy way out of this dilemma. But it might make sense to open up the Elk Hills Naval Petroleum Reserve, sell its 300,000 barrel-a-day production into the market, and divert an equivalent 300,000 barrels a day into a national stockpile. In five years a stockpile capable of delivering 3 million barrels a day for six months could be accumulated. Clearly, the advantages in beginning a national stockpile program very soon are large.

GEORGE L. PERRY

If Not Oil Taxes, Then What?

From his statement of January 29, 1975 before the Joint Economic Committee

Before putting the American economy through the wringer of another massive price increase for energy, it is vitally important to explore the alternatives available to us and to ask what we are trying to accomplish. Oil at current prices is plentiful on world markets. Were it not for the possibility that reducing U.S. imports could contribute materially to bringing down the cartel-controlled world price, a proposal to inflict on ourselves a further price increase would seem totally bizarre.

It is extremely doubtful that a rise in the price of U.S. petroleum products would be decisive in bringing down world oil prices. Assume for the moment that any reduction in U.S. consumption would result in a corresponding drop in our imports. The guess that a $30 billion increase in our petroleum bill would reduce consumption by 1 million barrels a day is highly uncertain but not unreasonable. Yet that amounts to only one-third of a billion barrels a year or about 3 percent of OPEC exports to the world. It would be hard to justify the attendant costs and risks to our economy on the chance that this last 3 percent would bring down the cartel and with it the price of world oil.

But the case is even weaker than that, for the easy assumption that any reduction in domestic use would show up as a corresponding reduction in imports is itself questionable. During 1974 our oil imports grew steadily once the embargo ended while domestic production declined month by month. A plausible explanation is that imports are not the residual source of supply for the United States, filling the gap between our demand and our maximum domestic output. With the same companies involved in importing and producing domestic oil, they are free to choose to import or expand their domestic output according to their own considerations of profitability or political strategy rather than according to any national desire to minimize the level of our imports.

I believe the reasons for the decline in domestic oil production last year deserve serious investigation. Until we are assured that domestic output is as large as possible, I do not believe we can assume that a reduction in total domestic demand would achieve a corresponding reduction in our petroleum imports.

There are far more direct and promising ways to put economic pressure on world oil cartel prices. If we want to limit imports, we should use import quotas and take bids from world market sources for filling those quotas. This would have two important advantages. First, with quotas we would know how much we are going to import. We would eliminate both the uncertainty of guessing how much demand will fall in response to a particular price increase and, more important, the uncertainty about how much of a drop in demand would show up as a drop in imports. Second, with competitive bidding to fill those quotas, we might add a potentially divisive element to the cartel's operation. We cannot directly break the cartel, but we can at least molest it.

Of course, by limiting imports through quotas, we would make the market-clearing price of petroleum in the United States uncertain. It would depend on the im-

port level set by the quotas, on the level of domestic production, and on the success of nonprice conservation measures that are adopted. Our aim should be to leave little or no gap between total demand and total supply to be closed by price increases or by other means, such as some form of rationing. To do this, top priority should be assigned to producing all that we can domestically.

This still leaves the hard question of what level of imports to aim for. I see no justification for choosing a low level that would create shortages at current prices despite our best efforts to expand domestic output. The world's productive capacity for oil exceeds world demand today. Competitive bidding for the right to export to the United States should have its effect, whether big or small, quite independently of how much we are willing to take in. And it makes no sense to tell American consumers that oil is available at prices they are willing to pay, but the government will not let them have it.

This leads me to the final issue of what to do if we do not want to do any of the above. Then, I believe, the answer is to do nothing. If an embargo comes, there will be time enough to ask for sacrifice, rationing, gas lines, excise taxes, or whatever; there will be time enough to choose our poison and swallow it before the last tanker arrives.

For the longer run, both demand and supply will respond increasingly to the price increases that have already occurred. Even prices well below those on today's world market—together with measures to encourage leasing, exploration, and development of new fields—will assure the expansion of domestic supply. This may or may not lead to self-sufficiency. But we should not pursue self-sufficiency if the cost is a protected domestic energy industry with prices well above those available to other countries in world markets. In the meantime, we should avoid crusades to deliberately reduce the amount of oil available to our country or needlessly to raise its price. Such policies can only worsen our problems.